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*INCLUDING 3500 ILLUSTRATIONS
WITH ATLAS & GAZETTEER INDEX*



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ILLUSTRATIONS

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PRONUNCIATION

THE imitated pronunciations are intended to assist the reader in the enunciation of unfamiliar words, and necessarily, especially in the case of foreign words, only afford a rough approximation to the actual sound. The signs used are to be pronounced follows —

| | | | | | |
|----|---|-----------------|----|----|-----------------|
| a | . | as a in hat | o | . | as o in not |
| ah | | „ a in father | ō | | „ o in note |
| ā | | „ a in hate | u | . | „ u in but |
| ār | | „ ar in hare | ū | . | „ u in tune |
| aw | . | „ o in more | ur | . | „ ur in lure |
| e | | „ e in bell | oo | . | „ u in put |
| ē | | „ e in bee | ōō | | „ oo in boon |
| ēr | | „ eer in deer | ou | . | „ ow in now |
| e | | { e in herd, or | ũ | | „ a in comma |
| | | „ i in bird | th | | „ th in think |
| i | | „ i in bit | dh | . | „ th in there |
| î | | „ i in bite | gh | .. | „ ch in loch |
| îr | . | „ i in fire | zh | .. | „ s in pleasure |

Other consonants are given their ordinary English sound

Shan Languages, see **Tai Languages**
Shannon, the longest river (c 240 m) of Ireland. Rising in Cavan in the Cudcagh Mountain it passes through Lough Allen and forms the E boundary of co Roscommon whence it receives the R Boyle it is then the boundary of co Galway and forms Lough Derg with its tributaries the Suck and Brosna. As the boundary of co Clare it passes Limerick and flows into a long estuary which runs into the Atlantic. From Limerick the river is tidal and navigable for large vessels. smaller vessels can reach Athlone a favourite trout fishing centre. The steep fall of the river has been used for a scheme for generating electricity and power from the Shannon is now largely used.

"Shannon" and "Chesapeake" (and American War June 1 1813) a famous fight between the British frigate *Shannon* under Captain Philip Broke and an American frigate *Chesapeake* under Captain Jas Lawrence. The *Chesapeake* was the larger vessel had more men and a heavier armament but the training and discipline on board the *Shannon* were superior. After sailing out of Boston harbour the *Chesapeake* received two broadsides and was boarded and captured. The duel was watched by crowds of pleasure boats that accompanied the *Chesapeake* to witness her expected victory.

Shan-shi inland province of N China. comprises a plateau bounded E by the Tai hang-shan range S and W by the Hwang ho R. and merges into the Mongolian tableland in the N. The most habitable regions are the basins of the Fên ho and Wei ho Valleys and the SE and E slopes of the Tai hang shan. the interior suffers from lack of rain. The chief crops are cereals. coal mining is of great importance. The capital is Tai Yuan. Area 81 850 sq m. pop 12 153 000.

Shan States, a number of partly independent States to the E of Burma. bounded by Yunnan in China S and Burma comprising 6 N and 35 S

States which were federated in 192 and are part of British India. The region is mountainous many of the parallel N-S ranges reaching 6000 ft. The chief rivers are the Salween and the Nam Tu. Agriculture tea and cotton growing and mining are the chief industries. The chief N States are Hsenwi Hsipaw and Mang Lon the chief S States Tung Keng and Mong Nai. Area 62 300 sq m. pop c 1 433 000.

Shantung important province of N China comprising the hilly peninsula of the same name jutting out into the Yellow Sea. It is bounded on the West by the Hwang ho Valley. It contains mountain masses running SW-NE and culminating in the famous Tai Shan in the N. The hills are bare but the valleys yield good crops of millet barley wheat maize cotton and hemp. An important industry is the rearing of silk worms and coal mining is also valuable. The chief towns are Tsinan the capital in the N. Tsochow and Chefoo a treaty port. Wei hai wei leased by Britain in 1898 was restored to China in 1930. The province is one of the richest and most densely peopled in China. Area 56 000 sq m. pop c 34 600 000.

Shanty (from Fr *chanter* = to sing) a song sung by sailors when performing their duties of raising anchors hoisting sails etc. In recent years there has been a revival of interest in these songs. Among the best known are *Rio Grande* *She andoah* and *Blow the Man Down*.

Shark, the name for many large fishes of the order Elasmobranchs (*q.v.*) which are particularly plentiful in tropical seas and notorious for their voracity. One of the largest species however called the *basking shark* found in British waters and feeding on small fish is comparatively harmless although it may be 40 ft long. Still larger and equally harmless is the *whale shark* of the Indian Ocean which is 50 ft long. The most formidable are the *blue shark* the *hamu* c

headed shark, and the white shark, which has sharp pointed teeth 2 in wide, and measures 30 or 40 ft

Sharp, Cecil James (1859-1924), lecturer on and collector of folk music. He published several books of English folk songs and dances, and was founder of the English Folk Dance Society

Sharp, Wilham (Fiona Macleod) (1856-1905), Scots author. His works influenced the Celtic revival, they include *Earth's Voices* (1884), *Romantic Ballads* (1886), *I from the Hills of Dream* and other volumes of poetry. He also wrote novels and works of criticism. Under pseudonym of Fiona Macleod, he published *Pharais* (1894), *The Sinner* (1895), *Green Fire*, *The Divine Adventure* (1900), and other poems

Shat-el-Arab, river of Iraq, formed by the combined Tigris and Euphrates, flows past Basra (qv) to the Persian Gulf, which it enters through a delta, length 123 m

Shaw, George Bernard (b 1856), Irish author and dramatist, born in Dublin and came to London at the age of 20. His early works were 5 novels (1879-83), of which the best known is *Cashel Byron's Profession* (later dramatized in blank verse as *The Admirable Bashville*). As a book-reviewer, music critic, and dramatic critic, he established a reputation for outspokenness. In 1884 he joined the Fabian Society, and was one of its most prominent members. He began to write plays in 1885 and devoted himself henceforward principally to this form of literature. His *Plays Pleasant and Unpleasant* were published in 1898, and *Three Plays for Puritans* in 1900. From 1901 onwards he wrote the following plays, *John Bull's Other Island*, *The Doctor's Dilemma*, *Major Barbara*, *Man and Superman*, *Heartbreak House*, *Back to Methuselah*, *Saint Joan*, *Getting Married*, *Arms and the Man*, *Androcles and the Lion*, *The Apple Cart* (1929), *Too True to be Good* (1932) and *On the Rocks* (1933). All these have been produced, and also published in book form with prefaces by the author

His doctrine of the Life Force, his Socialist propaganda, and his Nietzschean leanings are expressed everywhere with wit and elegance in dialectic prose or in humorous dialogue. His later works include *The Intelligent Woman's Guide to Socialism* (1928), and *What I really wrote about the War* (1931)

Shawnees see RED INDIANS

Shearwater, one of the commonest British species of the petrel family. It is about the size of a pigeon, feeds upon fish and offal, and nests in burrows, laying a single white egg

Sheep, ruminant of the genus *Ovis*, domesticated in Europe and Asia in prehistoric times. They are reared for wool and their flesh (mutton) and in some parts of the world for their milk, which is extraordinarily rich in fat and casein, and is used for cheese-making either alone or mixed with cows milk. There are long-woolled and short-woolled breeds of sheep, with wool 8-12 and 2-4 in long respectively. Hair, not wool, is the natural covering of sheep, wool being a primitive type of simple hair composed of two layers (not three as in hair), inner cortex, and outer cuticle. The latter has a rough surface. Sheep naturally have wool nearest the skin and hair above, though some breeds have no wool at all. The wool-bearing sheep have been brought to their present state by long breeding

The *Leicester*, one of the most widely distributed long-woolled sheep in Britain, is the smallest of the Longwools, with small usually bare head, white face, large nose, and no horns. The *Border Leicester* has a long head, wide between the eyes, large black muzzle, small ears, is hornless, and has long soft wool. The *Yorkshire Leicester* or *Wensleydale* is a large hornless animal with open lustrous wool, and bluish skin on the face and ears and occasionally over the whole body

The *Lincoln* is the largest breed of sheep in England, has lustrous and heavy fleece of very long wool and is the most valuable of the Longwools

The face and legs are white and it is hornless.

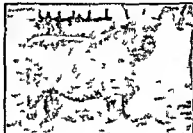
The *Romney Marsh* or *Aenit* is a hardy sheep of good constitution and good for fattening, immune from foot rot and liver rot.

The short woolled breeds are numerous. The *Sussex* or *Southdown* has fine close-curted wool and brown or grey face and short legs though it is not hardy in the N. The *Suffolk Down* is large and heavy and black headed with

no horns and produces many twins. *Oxford Hampshire Dorset* and *Shropshire Downs* are local breeds without horns valuable in their special areas. The *Shetland* and *North Devon* sheep are hardy medium sized animals with forward ewes which often give fat lambs at Christmas and another set later in the season. The *Ryeland* immune from foot rot is an occasional breed in Hereford and the surrounding country producing large and juicy



Romney 210 x 100



Shetland 210 x 100



Dorset 210 x 100



Suffolk 210 x 100



Southdown 210 x 100



Hampshire 210 x 100

mutton, and second only to Merino for wool. There is also a number of mountain breeds of sheep in the British Isles, especially the *Cheviots*, long-bodied white-faced sheep, and the *Blackface*, an extremely hardy small animal with black or mottled face and legs, large spiral horns, and a long tail.

Sheep feed on grass almost solely, summer and winter, in many parts, but feeding by forage crops or under cover is increasing in England. Animals for fattening are given cotton cake, bruised barley, hay and swedes, varied with linseed cake, oats, turnips, and straw chaff.

See also ARGALI, BARBARY SHEEP, MOUFLON

Sheep Dip, a liquid which, when diluted with water, is used for washing sheep to free their wool from injurious insects and disease. The method employed is to drive the sheep through a tank containing the dip. Sheep dip usually consists of tar oils rendered soluble through the addition of soap.

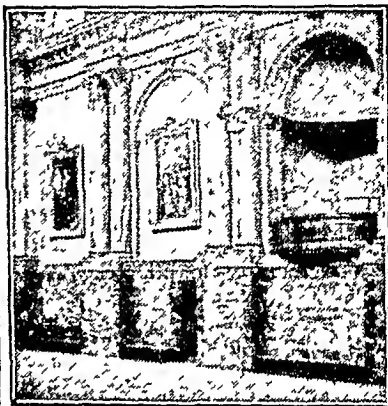
Sheep-Dog, the name for any breed of dog trained for controlling sheep (see COLLIE), but usually restricted in England to the "rough-coated" breed, known sometimes as the *Old English* or *bob-tailed* sheep-dog, which has a short tail and a characteristic gait owing to the lowness of the hocks.

Sheep Louse, (or *Sheep Tick*), a fly which gets into the wool of sheep and sucks their blood. The parasite fixes its head in the skin and causes a tumour. The female hatches her eggs in her own body till they reach the pupal stage, when they are fastened to the wool of the sheep. For remedy, see SHEEP-DIP.

Sheerness, naval port of the Isle of Sheppey, England, at the mouth of the Medway, on its S bank. It has an important naval dockyard. The older part, including the dockyard, is known as Blue Town. Pop (1931) 16,720. At the battle of Sheerness (June 9, 1667) a Dutch fleet, commanded by Admiral de Ruyter, destroyed the fortress and shipping and sailed up the

Medway as far as Upnor Castle, opposite Rochester.

Sheffield, city at the foot of the Pennines in the W Riding of Yorkshire, on the Don, the premier steel manufacturing town of the British Isles, producing cutlery, scissors, surgical and mathematical instruments, and engines. Other industries are silver-plating, chemicals, cabinet-making, and general manufactures. The city has a University (founded,



Interior of Cutlers' Hall, Sheffield

as Firth College, in 1879). Pop (1931) 511,740.

Sheffield Plate, the name given to articles made of copper plated with silver by heat. It was invented in Sheffield in the middle of the 18th cent, Joseph Hancock being the first to develop the process and found an industry which afterwards became famous for its craftsmanship. The copper and silver sheet were caused to adhere by heat, and were then beaten or rolled out and worked up into vessels, vases, candlesticks, and table ware. At first the copper was coated only on one side, but afterwards on both, and copper wire coated with silver also was drawn. The earliest productions had the copper hidden at the edges by solder, but later, silver fashioned to the exact size of the edge

was applied and soldered on. The end of the industry came in the middle of the 19th cent. when electroplating superseded it. The collecting value of specimens of the best period is almost equal to that of silver articles.

Sheikh (or *Shaykh*) [شايخ or شيخ] an Arabic title of dignity originally applied to respected men over 50 years of age now borne by head men of villages and nomadic parties. He is all powerful on local matters. The Sheikh ul Islam is ecclesiastical head of the Sunni Mohammedans.

Shekel, an ancient Jewish unit of weight and a coin of that weight. Fifty shekels made a mina and 3000 a talent. Monetary shekels were originally uncoined ingots of 210 (light shekel) and 420 (heavy shekel) grains of silver i.e. 1s 4½d and 2s 9d in value. They were first coined by Simon the Hasmonean c. 139 B.C. A shekel was divided into 20 *gerah*.

Sheldon, Gilbert (1898-1677) Arch. bishop of Canterbury. He was a Royalist supporter collected money for the exiled Prince Charles. He was Bishop of London (1660) and was preferred to the Archbishopric of Canterbury three years later. In 1667 he was made Chancellor of Oxford University and in the following year established the Sheldonian Theatre there.

Sheldrake, the largest and handsomest British duck rather goose-like in its carriage and boldly coloured white brown and black the two sexes being almost alike. It usually nests in rabbit burrows in sand dunes.

Shell, projectile fired from a mortar or cannon and containing explosive poisonous substances incendiary materials and the like. Explosive shells were first introduced early in the 19th cent. and soon had a decisive effect on naval warfare rendering wooden ships useless. The shells now used explode either by percussion or by time fuse. They are filled with various types of explosives both high and low. The chief types of

explosive shells are known as common pointed high explosive and armour piercing. *Shrapnel* is a shell consisting of a large number of lead bullets enclosed in a thin steel envelope provided with a time fuse and a small charge of explosive which scatters the bullets at a predetermined interval after firing. *Gas shells* consist of a casing containing a volatile poisonous substance and opened by a charge of explosive. *Smoke shells* produce heavy clouds of smoke and are used for purposes of concealment. *Incendiary shells* contain substances which burn vigorously and are adapted to set buildings on fire. The *star shell* is used for illuminating purposes it contains a parachute to which is attached a case of material which when ignited burns slowly with a brilliant light.

Shellac (or *Stick Lac*) a natural resin formed by a small insect (*Tacchardia lacca*) which is parasitic to certain Indian trees. The insects feed on the branches of the trees and the resin is obtained by heating the branches causing the resin to melt when it can be cast into sticks. By maceration of the crude product there is obtained a brilliant red dye known as lac dye now however rarely used. Ordinary shellac is of an orange colour a white variety can be produced by bleaching with sodium hypochlorite. Shellac melts at about 80° C. Its chief use is in the manufacture of gramophone records it is also employed in the compounding of varnishes for the stiffening of hats and in the production of sealing wax and inks. See also ADHESIVES.

Shelley Mary Wollstonecraft (1797-1851) English authoress second wife of the poet and daughter of William Godwin and Mary Wollstonecraft. Shelley was a friend and patron of her father and conceived a passion for Mary only two months after his remarriage with Harriet Westbrook in 1814. In July of the same year they eloped to Switzerland and in 1816 after Harriet's death they were

married (see SHELLEY, PERCY BYSSHE) Mary Shelley's own works include *Frankenstein* (1818), and several other romances and books of travel

Shelley, Percy Bysshe (1792-1822), English poet, born near Horsham, Sussex. Before entering Oxford (1810), he had written a volume of poetry and several romances of the "Gothic" type in imitation of "Monk" Lewis. At Oxford he became friendly with Thomas Jefferson Hogg, on whom, as on Shelley, the ban of the authorities fell after the publication of Shelley's *Necessity of Atheism* (1811).

In London, he eloped with Harriet Westbrook, an adoring schoolgirl. They travelled through Scotland, the



Shelley

N of England, Ireland, and Wales, until in 1813 they settled in London. Here Queen Mab, Shelley's first important work, appeared in 1813. He had met Godwin, a well-known philosopher, in 1812, and he visited him frequently. In 1814 he remarried Harriet Westbrook in England. But soon after he met Godwin's daughter, Mary Wollstonecraft, with whom he went to the Continent, and later, after Harriet Shelley's suicide in 1816, he married her. His father dying in 1815, Shelley returned to England to receive his inheritance, and published *Alastor* (1816). He went back to Switzerland, however, with Mary Shelley, and Claire Clairmont, Godwin's stepdaughter, and met Byron. They returned again in the same year. *The Revolt of Islam* appeared in 1817, and in 1818 Shelley went to Italy,

never to return. He was drowned by accident, owing to the capsizing of a sailing boat, on July 8 1822. His body was recovered by Trelawney and cremated on the sea-shore near Viareggio, in the presence of his friend Byron. On his wanderings and during his stay in Italy, Shelley had written many works, including *The Cenci*, a tragedy, and *Prometheus Unbound*, possibly his greatest work (1819), the *Wiles of Atlas*, *Adonais*, an elegy on Keats, *Epipsychidion*, and the *Defence of Poetry*.

CONSULT Hogg, *Life of Shelley* (1858), Dowden, *Life of Shelley* (1886), André Maurois, *Ariel* (1923), and the *Julian Edition* (R. Ingpen and W. E. Peck) of Shelley's works.

Shellfish, popular name for various marine animals, mostly edible, which have a hard shell, such as the lobster, whelk, and oyster, but more properly restricted to the last two and other species of molluscs.

Shell-money, a primitive medium of exchange. A tusk-shell was used by the Indians of Alaska and California, 25 strung end to end were equivalent to c. £50. Wampum shell-beads (qv) were common among other N American Indian tribes both as ornaments and currency. Cowry shells were so used on nearly all the coasts of the Indian Ocean. In Bengal 3840 equalled a rupee, and the annual import was worth £30,000. In W Africa, until c. 1850, ivory shells were commonly used for all trade, and were threaded in strings of 40 or 100, 2000 made a dollar. Land-snail shells, cut into circles, were used in Portuguese W Africa, ring-cowries in Asia ground shell-beads in the Solomon Islands, flaked shells in the islands N of New Guinea, and many varieties in N. Australia.

Shenandoah, river of Virginia, USA, c. 100 m long, flowing between the Alleghenies and the Blue Ridge Mountains from near Staunton to Harper's Ferry, where it joins the Potomac. The valley was the scene of

many engagements in the American Civil War

Shen-shi, province of W China. The climate is dry and cold especially in the N. Agriculture in the valleys of the Wei and Han is important and wheat and other cereals cotton and fruit are grown Sianfu near the Wei is the capital Area 75 200 sq m pop 1 250 000

Shepherd's Purse, common weed belonging to the cruciferous family distinguished by the inversely heart shaped and flat seed pouches varying from a few inches to 2 ft according to the soil The root leaves are pinnate the stem leaves toothed and arrow-shaped at the base The whole plant is hirsute

Sheppard Hugh Richard Lawrie, English divine late vicar of St Martin in the Fields London where he established a reputation for his broad cast sermons. He was ordained in 1907 and in the same year became chaplain to Oxford House of which he

was head 1909-10 He served as a chaplain in the World War As vicar of St Martin in the Fields 1914-27 he was largely responsible for establishing the reputation for broad mindedness which that church now holds Returning on account of ill health he was Dean of Canterbury 1929-31 He then returned to St Martin's as lecturer He was made a Companion of Honour in 1937

Sheppard, Jack (1702-1724) English criminal a workhouse child was first arrested when he abandoned his apprenticeship and thenceforth took up robbery as a career He escaped from jail many times notably from the condemned cell in Newgate (1724) He was taken again and hanged at Tyburn

Sheppey Isle of, island in NE Kent, separated from the mainland by creeks which form part of the mouth of the Medway The island is low and flat and suffers encroachment by the sea Agriculture and sheep rearing are carried on The chief towns are Queenborough and Sheerne s

Sheraton, Thomas (1751-1806) last of the 4 great English cabinet makers of the 18th cent He continued the pursuit of lightness combined with strength begun by Hepplewhite and his furniture is structurally excellent The influence of the Louis XVI period is seen in his general avoidance of curves He used carving very sparingly and was much more partial to inlay than his predecessors The chairs are relatively small the backs have top and bottom rails the treatment of the intervening space varies In some examples there are three or five upright splats the central one being broadest and often inlaid in others the splats intertwine or even cross in an X pattern in later examples the space is partly occupied by a slightly carved horizontal member Furniture legs at first followed the style of Hepplewhite tapering downwards and sometimes ending in a spade foot the arms of elbow chairs corresponded

In Sheraton's later period the turned



V. R. W. Dick Sheppard

leg, with slight mouldings, appeared. The sideboard reached æsthetic finality. Bedroom furniture, including wardrobes and chests of drawers, became most attractive. Small objects, such as tea-caddies, knife-boxes, and trays, often had an inlaid shell or scroll medallion, in addition to the edging inlay. Mahogany was his favourite wood, though some fine satinwood and painted furniture was made, frequently decorated with painted panels.

Towards the end of his life, Sheraton attempted to copy the French Empire style, with deplorable results, but in his best period he produced work almost equal in quality and design to the masterpieces of Chippendale and Hepplewhite. He published in 1791 a book of designs called *The Cabinet-Maker and Upholsterer's Drawing Book*.

Sherborne, market town, Dorset, on the R. Yeoo, centre of an agricultural area. The abbey church (formerly a cathedral) is Norman, Early English, and Perpendicular. The public school was founded in 1550. Pop. 6500.

Sheridan, Richard Brinsley Butler (1751-1816), orator, wit, and dramatist, born in Dublin and educated at Harrow, Waltham Abbey, and the Middle Temple. In 1772 he secretly married Elizabeth, daughter of Thomas Linley, of Bath, the musician. He produced his first play, *The Rivals*, in 1775, this was followed, in the same year, by *St. Patrick's Day*, a farce, and *The Duenna*, a comic opera. In 1777 came his *Trip to Scarborough*, and his masterpiece, *The School for Scandal*. *The Critic* appeared in 1779. Sheridan revived the Restoration comedy of manners, investing it with additional grace and wit and omitting its indecency. He entered Parliament in 1780, and held several high positions in the Whig and "All the Talents" ministries; his speeches at the trial of Warren Hastings established his reputation for oratory. He was never out of debt, and died in relative poverty. He was the most caustic wit of the age.

Sheriff, originally the chief administrative officer in each county.

His importance has greatly declined, but he still has certain duties to perform, e.g. he is often the returning officer at parliamentary elections; he returns the jury in criminal trials, writs of execution (*q.v.*) are addressed to him, in the Sheriff's Court he has jurisdiction to assess compensation for land acquired compulsorily under statutory powers, to assess damages in undefended actions, etc. The period of office is one year, and the appointment is made by the King at a ceremony known as "pricking the sheriffs," from a list submitted by the judges on Nov. 12 each year.

Sherman, William Tecumseh (1820-1891), American soldier, took part in the war with Mexico (1846-8), and, after a period in banking and legal business, volunteered at the outbreak of the Civil War (1861), and was made brigadier-general. He took part in the battles of Bull Run and Shiloh, and was placed in command of the Army of the Tennessee in 1863 and of the military division of the Mississippi with a force of 100,000. In 1864 there occurred his famous 300-mile march through Georgia, "from Atlanta to the sea." In 1865 his second march, through the Carolinas, culminated in the defeat of Johnston, which led directly to the termination of the war.

Sheriff, Robert Cedric (b. 1896), English dramatist, served in the

B. E. F. in the World War, with which his play, *Journey's End* (1928), is concerned. His other works include *Badger's Green* (1930) and *The Fortnight in September* (1931), a novel.



R. C. Sheriff

's Hertogenbosch, capital of N Brabant Holland lies on the Dieze at the confluence of the Aa and Dommel It contains a 15th-cent. cathedral Pop (1932) 43 000

Sherwood Forest, in ancient times extended from Nottingham N to Worksop and was c 20 m long and from 5 to 9 m wide It was a Crown forest from the time of Henry II and a favourite hunting ground of several monarchs It is traditionally noted as the refuge of Robin Hood and his men Disafforestation has gone on at different periods but patches still remain to remind one of the ancient character of the district.

Shetland (or Zetland) a group of islands (numbering c 100) lying off the N coast of Scotland constituting a county of Scotland area c 550 sq m the largest islands are Mainland Unst Fella Yell Bressay E and W Burra Foula and Fair Isle They are rocky and bare and the cliff drop steeply to the sea The pop (1931) 21 400 who inhabit 24 only of the islands are engaged in sheep- and pony rearing fishing and the production of tweeds and knitted articles Small crops yield oats barley and potatoes The chief town is Lerwick on Mainland

Shiah, or Shi'ites one of the two chief Mohammedan sects differing from the Sunni (q.v.) mainly regarding the question of the rightful succession in the religious leadership of Islam The Shi'ites maintain that the true successor of Mohammed was Ali and that Abu Bakr Omar and Othman were usurpers Some members of the sect pay to Ali a veneration hardly less than is accorded to Mohammed himself They are mostly found in Persia See also MOHAMMEDANISM

Shield, a piece of armour worn generally on the left arm for the purpose of defence which came into general use about the time of the Bronze Age The usual materials of which it was constructed were wood hide stretched over a wooden or wicker frame or metal Convex shields, protecting the

whole body were used in the late Minoan Age of Crete The Bronze Age shield resembled the Highland targ and was circular with a central boss and several studs Early Greek shields were made of ox hide and were shaped like a figure-of-eight later they were round or oval From the 4th cent B.C. shields began to carry a device Roman shields were first round then oblong Norman shields were long and kite shaped and gave rise to the form depicted in heraldry Shields continued to form part of the soldiers' armour until after the introduction of firearms

Shield Fern, various forms of the genus of ferns *Aspidium*

Shield of David (Heb Magen David) a device in the form of two crossed triangles forming a six pointed star Its origin

is uncertain though it appears to have been used in Hebrew religious ornamentation and as a Jewish emblem as far back as the 1st cent A.D. In modern times it has come to serve as a Jewish national emblem By some it is held that the crossed triangle is a fanciful calligraphic form of the name David as written in Hebrew



Shi'ites, see SHIAH

Shilling English silver coin worth 12 pence 20 of which are equivalent to 1 pound The coin was first struck in silver in 1504 and milled by Charles II The standard fineness of silver for coinage was originally 925 but this was reduced to 500 in 1919 The present shilling is therefore only token money it is actually worth less than 2d

Shingles see HERPES ZOSTER

Shintoism, the ancient national faith of the Japanese Shinto—the way of the spirits—is the Chinese name the native designation being *Kamu no-michi* Shinto has no sacred

books or distinctive moral code, and is in its main features a simple system of reverence for ancestors and patriotic observance. There is no public worship in the Western sense, but there are Shinto temples and priests, and a number of domestic ceremonies are performed. Shinto recognises an enormous number of gods, and seems in earlier times to have included fire-worship and even human sacrifice. It has in course of time borrowed much from popular Buddhism, and many Japanese follow the observances of both religions.

Ship A hollow vessel built for travel over the water, and provided with means for propulsion and guidance, known to mankind from the Stone Age onwards. Accessory to propulsion and guidance are means for protection against rough water and for stabilisation.

The physics of a ship's buoyancy and stability are discussed under **HYDRAULICS**. Buoyancy and stability are easy to obtain, but in practice shape is decided in the first place by the maximum case of propulsion, and in the second by seaworthiness.

Sailing Vessels—The above considerations apply to boats propelled by human and mechanical power. But in the sailing boat, capable of sailing to windward, an entirely new set of considerations arises. The sail is arranged so that it can be set at any desired angle by allowing it to swing around the edge by which it is attached to the mast. It is of canvas, and may be stretched on *spars*, the free end of the lower spar or *boom* being held to the boat by a *sheet* (rope). When the wind strikes the sail at an angle, it exerts upon it a pressure in exactly the same way that the relative wind exerts a lifting force on a moving aeroplane.

Development of the Ship The earliest forms were the dug-out canoe, made of a single log, and the coracle, a flexible boat of skin on a wicker framework, developing from the raft. These converge in the ship built of

wood, through the bark canoe, in which a skeleton or framework of wood or wicker is covered by bark, which is easily worked.

The Egyptians were certainly the first to build ships in the modern manner. They had no supply of large trees from which to make dug-out canoes. By 3000 B.C. they were building large sailing-vessels, and navigating the Mediterranean over a range of several hundred miles.

The Vikings We are well supplied with remains of the early ships from our own part of the world, many dug-outs from the Stone Age having been preserved. The most remarkable remains are, however, the Viking ships. Wooden ships can be either *carvel built*, with planks butting together, or *clinker built*, with planks overlapping. The Scandinavians invented the clinker method, which has great advantages for boats intended to be beached. We use copper rivets, the Vikings used iron, but in exactly the same manner as ourselves. The Vikings used sail, and the lines of their ships were excellent. Viking ships were double-ended, with bow and stern alike. The invention of the *central rudder* does not seem to have come about until the 12th cent. See **RUDDER**.

Rig The next invention was the bowsprit and the development of more efficient rigging (*q.v.*). This took place in the 15th cent., and we now get the clear distinction developing between the *fore-and-aft* and the *square rig*, each of which finds its place as a means of propulsion. There is no fundamental difference in the mode of operation of the two rigs, but merely the practical fact that the square sail can be set to receive wind from any quarter upon the same side of it, whereas the fore-and-aft sail is exposed to the wind on one side or another according to the direction. The fore-and-aft sail is a comparatively early invention in all the forms in which it is used in modern sailing-boats. The largest modern sailing-ships have composite rigs, but until fairly recent

times big ships were all square rigged.

Masts. The first half of the 15th cent brought the development of the modern sailing ship with several masts and a number of sails. The ships at the beginning of the century had only one mast and one sail. It is supposed that the extra masts (at first as in many types to-day smaller than the main mast) developed from flagstays. Early in the 16th cent there was great competition to build ships which reached a length of c 250 ft and had several masts up to five. To this period belongs the exploration of the world and the beginnings of world wide commerce.

Clippers. The 18th cent development of fast sailing-ships or *clippers* showed what could be done with good design for cargo-carrying purposes and modern yachts have developed speed to the utmost. The 18th-cent warships which continued to be much larger and heavier than merchantmen developed more seaworthy lines. The improvement in

guns no doubt leading to a diminution in deck work. About this time the *job sail* was introduced. This sail can be added to other sails without an extra rig and is very useful for manœuvring.

The development of sail in modern times has been entirely in the field of sailing yachts, even small commercial sailing ships such as fishing boats, tending to be supplanted by power vessels. Sail is indispensable for Arctic and similar exploration but here again the aeroplane tends to supersede present methods. See also YACHTS, STEAM AND OTHER POWER DRIVEN SHIPS, SUBMARINE SHIPPING, RIGGING.

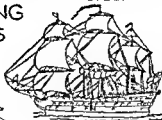
Shipka Pass, a pass in the Balkan Mountains carrying the road from Rumelia to Bulgaria and Adrianople. It was the scene of several engagements in the Russo-Turkish War (1877-8).

Ship money a tax levied by Charles I in Oct 1631 ostensibly for the equipment of ships for the defence

SAILING SHIPS



Viking ship



battleship of Nelson's day



ketch



galleon



three masted schooner



barque

of the coast and maintaining command of the sea. The legality of this tax was denied and tested by Hampden, but he lost his case before a Bench said to have been "packed". There were many precedents for this tax, one as late as James I., but Charles sought to extend it to the whole country, instead of to the maritime counties. In effect it was merely a means for filling the King's purse, and it became a prominent factor in the Parliamentary dispute with the King leading to the Civil War.

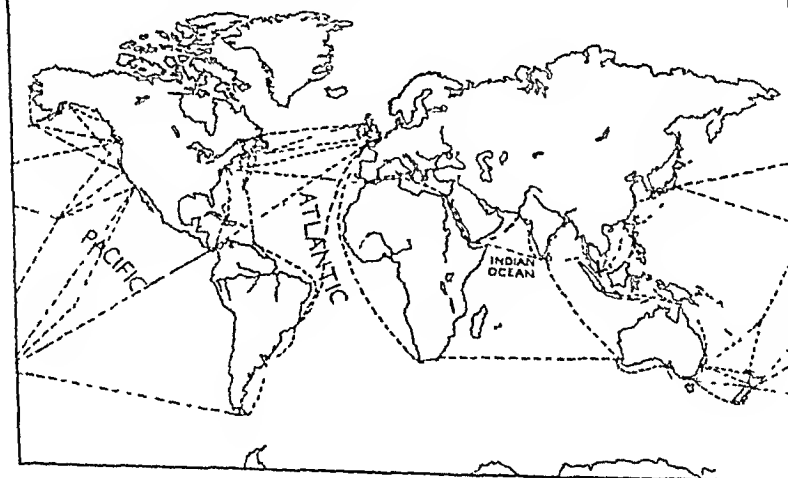
Shipping Sea transport was developed among the earliest Mediterranean civilisations, notably in Crete while the Phœnicians traded with all the Mediterranean coasts, in the Atlantic, Baltic, and in Britain in the 6th cent B.C. In the 5th cent B.C. Athens was, for a time, the leading sea power in the E. Mediterranean, while, in the W. Mediterranean, Carthage remained the chief maritime nation till destroyed (146 B.C.) by Rome, which was compelled to become a maritime empire in the process. In the N. of Europe, the Norsemen were intrepid seamen, but

they were raiders rather than traders. In the Middle Ages the Genoese and Venetians dominated Mediterranean trade, until, on the discovery of America, the W. position of Spain and Portugal gave them a tremendous advantage in the new trade. Ocean routes were tentatively explored, the W. Indies were reached in 1492 and Calicut in 1498, while in 1519-22 the world was first circumnavigated by Magellan.

A large and varied ocean trade now grew up, chiefly in the hands of Spain, which included treasure from America, silks and spices from the East, and slaves from Guinea.

English-Dutch Rivalry Meanwhile English merchantmen were challenging the supremacy of the Hansa fleet in the N. of Europe, and far-sighted navigation laws and good shipbuilding soon made their vessels the most efficient on the seas. John Cabot sailed to N. America from Bristol in 1497, but, hampered by Spanish sovereignty in the W., England turned her attention in other directions for another century and succeeded in

WORLD SHIPPING ROUTES





T.S.S. Duke of Lancaster L.L. & N.Y. Cross
Charter Steamer 3409 to 2.



Bremen Norddeutscher Lloyd Line 34 650 to



Atlantic Coast Line 30 694 to



Hamburg White Line 34 331 to



The Pallas Lounge 34 47 to 2.

opening up communication with Russia via Archangel. The Dutch made great headway, established themselves in the E Indies, captured a large part of the Oriental and Mediterranean trade, besides taking the lead in the North Sea fishing industry. The Navigation Acts of 1651 and 1660 recaptured much trade for British ships, and this continued to increase steadily with the colonising of the 18th century, while Holland, involved in European wars, declined as a maritime power. By 1800 the important E Indian trade was almost entirely in British hands.

The Steamship Era. The Industrial Revolution in England, with its enormous resultant increase in trade, and the simultaneous paralysing of continental rivals by the Napoleonic Wars, put British shipping in an unequalled position, which it easily maintained. Various revolutionary changes, such as the application of steam to sea transport in 1819, the introduction of iron vessels and then of steel ones in 1872, were also first experimented with in this country, which thus obtained an important lead in subsequent development.

Although a regular Atlantic service by steam was inaugurated in 1840, it was not until 1885 that the tonnage of steam exceeded that of sail. In 1858 *The Great Eastern* of 19,000 tons was launched. By 1870 Great Britain owned 1,200,000 tons of shipping, her nearest rival being the United States with 200,000.

Ocean Routes. During the 19th cent the great modern ocean trade routes were gradually developed, as industry and food production became specialised in different parts of the world. The transatlantic route by which England imported cotton and other raw materials from America, and shipped back textiles and machinery, and the route to the Far East by the Cape, which handled the rich trade monopolised by the E India Company, were the most important. The opening of the Suez Canal in 1869

greatly increased the volume of Oriental trade.

After the gold rush of 1850 the route to Australia grew steadily in importance with the growth of the wool and grain traffic, while by the end of the century the rapid development of S America had started an important trade with Rio and the River Plate, coal and machinery going out from England, and wheat and meat returning.

Post-War Period. Great Britain continued to own c 45 per cent of the world's tonnage until 1913, in spite of large increases in the American and German merchant fleets. The World War, in spite of heavy losses, brought great prosperity to shipping in the transport of troops, war material, and provisions, which were chiefly handled by British ships.

The heavy war losses (8 million tons of British shipping alone) led to a tremendous increase in shipbuilding, chiefly by America and Japan, and by 1923 the world's tonnage was one-third greater than in 1913, while the British share had decreased from 43 per cent to 34 per cent. This increased tonnage was far more than trade warranted and, coupled with the dislocation of many pre-War routes, produced an excess of supply over demand which remained uncorrected in 1933. In that year a subsidy was proposed for British shipping, in order to enable it to cope with heavily subsidised foreign competitors.

Ships' Watches. Timekeeping on board ship is regulated by a system of time zones of 15° of longitude, there being therefore 24 around the earth. Zero zone is bisected by the meridian of Greenwich, zones to the W are numbered consecutively and given a positive sign, and those to the E a negative sign. These signs give the number of hours to be added or subtracted to Greenwich mean time, time being reckoned through the 24 hours from midnight to midnight.

Time is announced on board ship by striking a bell every half-hour. The

24 hours are divided into seven watches beginning at noon (five watches of four hours each and two dog watches of two hours each) The watches are as follow

| Watch | Time |
|--------------------|-----------------|
| A tnoon | noon-4 p.m. |
| First Dog | 4 p.m.-6 p.m. |
| Last or Second Dog | 6 p.m.-8 p.m. |
| First | 8 p.m.-midnight |
| Middle | Midnight-4 a.m. |
| Morning | 4 a.m.-8 a.m. |
| Fore noon | 8 a.m.-noon |

Shipton Mother in English legend a prophetic of Knaresborough Yorkshire Ursula Southall (b. c. 1487) There is no real evidence of her existence but she was popularly believed to have occult powers and to have foretold the great Fire of London (1666) and the Civil War

Shiraz, ancient city of Persia capital of the Fars province in a fertile plain surrounded by high mountains which separate it from ancient Persepolis in the NE and the Persian Gulf in the SW and S The city contains many beautiful mosques world famous rose gardens and tombs of the great poets Sa'di and Hafiz The chief industries are silver work mosaics rug making and the manufacture of silk and cloth Pop 35 000

Shire river of E Central Africa chief tributary of the Zambezi flows from Lake Nyasa impeded by many falls notably the Murchison Falls Length c 35 m

Shire Moot, in Saxon times in England a meeting of all the free men of a shire for transacting judicial and administrative matter pertaining to the shire Later it became the shire court and played a part in early Parliamentary elections

Shoddy wool obtained from woollen rags and wastes and re-spun. It is generally mixed with cotton or new wool

Shoe-bill, (or *Hale-headed stork*) a large grey bird 5 ft

high It is related to the herons and storks but distinguished by its huge duck like bill which has a small hook at the tip It is commonest in the swamps of the Upper Nile

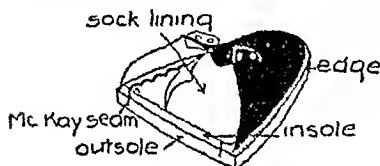
Shoes and Boots Foot covering for various purposes is almost universal but the modern boot and shoe made up of stiff sole and flexible upper was a luxury confined to the better situated classes until modern times though its invention is certainly very ancient Three primitive types of foot gear are the *sandal* a sole attached to the foot by cords of leather or other material the *moccasin* a piece of leather wrapped round the foot and sewn along the instep and the *wooden shoe* hollowed out of one piece of wood The shoe is a combination of the moccasin and the sandal and the top boot already used in the Minoan Age is simply an extension of the shoe Boots with wooden soles and leather uppers commonly known in England as *clogs* or *pattens* are in use in many parts of the world and are worn by work people in the N of England especially in Lancashire The *wooden shoe* or *sabat* is still worn in Holland and parts of France it is made large enough to be lined with straw or hay

High boots of an elaborate description were known in Babylonia and Syria in 3000 B.C. but throughout the East the common wear was the sandal which is more comfortable in a hot climate The Greeks and Romans wore it the Roman Senator was however distinguished by his high heeled shoes of red leather The shoe was again developed in medieval Europe and its form was subjected to many changes of fashion the long pointed toes of the 14th cent being particularly striking these reached a length of $\frac{1}{2}$ ft in Edward II's reign and were fastened to the knee by chains

In modern times great improvements have been made in the quality and range of materials used for boots and shoes New methods of tanning

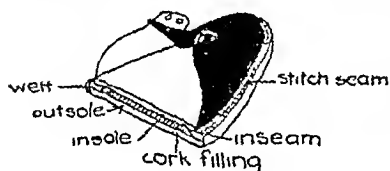
leather and impregnating it with various materials have improved its wearing qualities, and the use of soles made wholly or partially of rubber has become very general. The *plimsoll shoe*, having a canvas upper vulcanised to a rubber sole, was originally developed for wear on board ship, but is much used by landsmen and children. *Sea-boots* of rubber are replacing the earlier top-boots of greased leather worn where wading in water is necessary, the fisherman uses *waders* which reach to the thigh.

Hand-sewn shoes, although superior in wearing qualities, are so much more



Cross section of sewn shoe

expensive than machine-made shoes, that the latter have practically replaced the former. Soles may be attached by welting or by stitching. Welted shoes are now made by



Cross section of welt shoe

sewing in a manner which imitates the hand-sewn article, and other types are similarly finished, the tacks first used being substituted by fine wire staples, so as not to interfere with the work on the sewing machine.

Shogun, originally a Japanese general commanding in the field, Yoritomo first being given the title in 1192 by the Emperor Takahira. The post was held by successive military leaders until, in 1603, the Shogun Tokugawa

took over the ruling power, and his hereditary successors in the Shogunate held it until the revolution of 1867 re-established the Emperor's power.

Sholapur, district and city of British India, situated in central Bombay Presidency Area, 4160 sq m, pop. district, 744,000, city (1931) 121,650.

Shooting, the sport of killing game with a shot-gun, or "fowling-piece". During the 18th cent it superseded hawking, hunting, and fishing as the principal British field-sport. British "game-birds," i.e. those which have a legal "close-season," and to kill which a "game-licence" is necessary, are pheasants, partridges, red-grouse, and black game, ptarmigan and capercaillie are confined to Scotland. Birds which are shot for sport, but are not legally "game," are known as "wild fowl," and include all kinds of wild duck, plover, etc. Snipe and woodcock, though they are strictly speaking, "wild fowl," are usually classed among game-birds. The only British quadrupeds ("ground game"), killed for sport with the shot-gun are roe-deer, hares, and rabbits. In Scotland the red deer is stalked and shot with the rifle.

Pheasant-shooting begins on Oct 1 and continues till the end of Jan. The pheasant has for many years been specially bred for sporting purposes, and is now one of the commonest of game-birds. It frequents "coverts," or woods, with plenty of undergrowth.

Partridge-shooting lasts from Sept 1 to Jan 31. Partridges, which consort together in "coveys," frequent pasture and arable land, and especially root-crops.

Grouse-shooting lasts from Aug. 12 to Dec 10, and takes place chiefly on the moors of Yorkshire and Scotland, and in the Scottish Highlands.

Cartridges and **breech-loading guns** have been known since the 16th cent, but early "fowling-pieces" were generally muzzle-loaders, a charge of loose powder and shot being rammed down with a ramrod. The first really efficient type of cartridge with an

land has won the shield 8 times and England 6 times

Miniature rifles make it possible to practise rifle-shooting on covered ranges of 25 yds and upwards. The rifles are of 22 calibre, or a service rifle can be used with a "Morris tube" fitted inside the barrel. The light rifle championship competition is held annually for the *Alexandria Cup* presented in 1907, under the auspices of the *Society of Miniature Rifle Clubs*.

Shops' Acts, legislation to improve the conditions of employees in shops. In England persons under the age of 18 may not be employed in a shop, (that is, any premises where any retail trade or business including that of a hairdresser, is carried on) for more than 74 hours, including meal-times in any week, and must not be employed after 1.30 p.m. on at least 1 week-day each week. Intervals for meals must be allowed. In all rooms of a shop where female assistants are employed, seats in the proportion of at least one seat to every three female assistants in each room must be provided, in a suitable position. Every shop must be closed not later than 1 p.m. on one week-day each week, which may be fixed by the local authorities, who have also power to fix a closing hour, not earlier than 7 p.m. Special provisions deal with shops where more than one business is carried on, as combined post offices and shops, etc. Under the *Shops' (Early Closing) Acts*, every shop must close not later than 8 p.m. on every day except Saturday, when 9 p.m. is the hour fixed. There are exceptions relating to the sale of meals, food, liquors, medicines, newspapers, fruit, sweets, ice-cream, table waters, etc.

Shop Stewards, representatives of the Trade Unions who make reports of local conditions, enrol new members, and sometimes act as spokesmen of the men to the employers. Under the War-time industrial truce, the Shop Stewards were given wide powers of negotiation. These powers have since been withdrawn. Originally only in skilled unions, the office of shop

steward is now common in all trades.

Shore, Jane (d. 1527), mistress of Edward IV of England, left her husband, William Shore, a goldsmith by trade, for the Court in 1470. She was popular at Court and among the people, and gained considerable influence over the King and, after his death, the Marquess of Dorset and William Hastings. The Duke of Gloucester (later Richard III) had her accused of sorcery and publicly punished. She died in poverty.

Shorthand, system of graphic notation making possible the recording of speech with greater speed than by ordinary writing. It was practised, and brought to a high state of perfection, by the Greeks and Romans, and the Tironian system of the latter survived to mediæval times. Modern shorthand originated in England, and the first system was that of Timothy Bright (1588). Pepys wrote his Diary in the system of Thomas Shelton (1630). These, and the many other early systems, were based on orthographic spelling. The idea of using sound instead of the alphabet as a basis was first used by William Tiffin (1750). Pitman's system first appeared in 1837, and soon attracted attention by reason of its methodical classification of speech sounds and its use of abbreviations. It is marred by such intricacies as the distinction between thick and thin strokes, but remains probably the most widely used to-day. The chief rival of Pitman's system is that of John Robert Gregg, who brought out his first book in 1888. The main principles of Gregg's system are a cursive, naturally sloping script, as distinguished from a geometrical script, and the insertion of vowel signs without having to lift the pen. Experts in these last two systems have attained a speed of more than 25 words a minute.

Short Parliament, The, summoned by Charles I on April 13, 1640. When it refused to vote supplies till grievances were redressed, the King dissolved it after it had sat for only three weeks, o

May 5 1640 It was followed in Nov by the Long Parliament (q v)

Short Story The A class of fiction distinct both in quality and form from the novel Brevity is not enough to make a short story and conversely a story as long as Henry James's *The Turn of the Screw* (40 000 words) yet remains strictly within the limits of the short story Artistic unity concentration and condensation a scrupulous rejection of all matter which has not its inevitable and necessary place in the complete mosaic are the true essentials of this form of fiction and far more than its brevity distinguish it from the more loosely knit novel

Examples Although excellent examples of it may be found in the older literatures in the Bible in the *Decameron* and in many folk stories nevertheless it is only in modern times that the short story has been recognised as a separate branch of literature Its inception belongs to America and in the first instance to the *Sketches of Washington Irving* which appeared early in the 19th cent and the *Tales of Nathaniel Hawthorne* a little later Of the group of French short story writers of the late Nineteenth Century Guy de Maupassant and Anatole France were the most prominent The line of American short story writers was continued by Bret Harte Mark Twain and Henry James

To Rudyard Kipling we owe the development of the short story in England and subsequent development in America for he was the model upon which O Henry and his innumerable imitators worked The art of short story writing has become an important feature of modern literature and such writers as Katherine Mansfield and A E Coppard have brought it almost to perfection

Short term Debt, see FLOATING DEBT

Shove-halppenny a game played on a marked board in which halppennies or discs are jerked from the edge along the board with the ball of the thumb The board is divided into 9 beds

14 in wide the object being to lodge the coins within the beds In one form of the game the player who first has 3 coins in every bed is the winner

Shrews (or *Shrew* *Uli* e) the name for a family of mammals of the order Insectivora (71) resembling mice and rats in appearance but distinguishable by their long flexible snouts and different teeth Shrews are plentiful all over Europe Asia Africa and N America and live mostly on the ground sheltering in burrows but some are aquatic There are three British species the *common shrew* the *priory shrew* and the *water shrew* The pigmy is the smallest British mammal but there are several smaller kinds of shrew elsewhere which are the tiniest of all mammals not much over 1 in long They all have a scent gland on the sides of the body this makes them distasteful to cats which will kill but not eat them

Shrewsbury county town of Shropshire on the R Severn Among its industries are included the manufacture of rolling stock and tanning flax spinning and brewing Shrewsbury has an ancient castle a Norman abbey and a famous public school The town is the seat of a Roman Catholic bishop Pop (1931) 58 000

Shrewsbury Charles Talbot, 12th Earl and Duke of (1660-1718) English politician was one of the seven who invited the Prince of Orange to England in 1688 He was created Duke in 1694 After serving twice as secretary of State (1688-90 1694-6) he was accused of treason for having conducted correspondence with James He resigned in 1700 and lived abroad until 1707 On his return he joined the Tories and was made Lord Chamberlain (1710) Lord Lieutenant of Ireland (1713) and Treasurer (1714) On the death of Anne he aided the accession of George I whose Lord Chamberlain he was until his resignation in 1715 He had no successor in the dukedom

Shrewsbury John Talbot, 1st Earl

of (c 1375-1453), English soldier, after serving in the Welsh Wars and in Ireland, fought in France at the siege of Orleans, and was captured at Patay (1429). His campaign of 1431-6 saved Normandy for England. He won the victory of Crottoy (1437) and then recovered Harfleur (1440). In 1452, after a further campaign in Ireland, he returned to France to aid the Gascons, but fell in attempting to raise the siege of Castillon.

Shrikes (or *Butcher-birds*) rapacious, mostly insectivorous birds, of which the best-known British species is the red-backed shrike, which is a summer visitor. Although smaller than a thrush, the shrike feeds upon mice, small birds, bees, and a variety of insects. It derives its second name from its habit of storing the carcasses of its victims by impaling on the thorns of the haw tree.

Shrimp, name of a group of small crustacea of the order Macrura. Two edible varieties are found in N. Europe, called respectively *Red* and *Brown*, on account of their change of colour when boiled. The red shrimp is like a small prawn (qv), with a similar toothed beak, but differing by having the second pair of legs very long and many-jointed. The brown shrimp, to which the name properly belongs, is not so flattened, has a short beak, and the first pair of legs provided at the end with a closable hook.

Shropshire (or *Salop*), English county on the Welsh border, bounded N by Flint and Cheshire, S by Worcestershire and Herefordshire, E by Staffordshire, and W by Radnorshire, Montgomeryshire and Denbighshire. The N and E portions of the county lie in the Severn valley, the W and S are hilly, comprising the Caradoc range, Clun forest, the Clec Hills, and Wenlock Edge. The chief river is the Severn. Industries include the cloth trade (from Welsh wool) and coal-mining with associated manufactures. The county is agricultural, barley and oats being the main crops, cattle and sheep are reared in large numbers, and

dairy farming is extensively practised. The chief towns are Shrewsbury (the county town), Oswestry, Ludlow, and Ironbridge. Settled by the Romans, Shropshire was annexed to the kingdom of Mercia by Offa, who constructed Offa's Dyke (qv) to defend it from



Ludlow Castle, Shropshire, where Milton produced "Comus" in 1634.

Welsh invasions. Area, 1,347 sq. m.; pop. (1931) 244,100.

Shrove Tuesday, the English popular name for the day before Ash Wednesday, so called because of the ancient custom of receiving the Sacrament of Penance or being "shriven" on that day, in preparation for Lent. The association of the day with pancakes is probably a relic of the ancient discipline according to which eggs might not be eaten during the ensuing 40 days of Lent.

Shrub, any bush or woody plant smaller than a tree, having several stems growing from the same root. The distinction between a shrub and a tree is largely artificial.

Shuffle-board, a game played on a ship-deck, in which wooden discs 6 in

in diameter are shovelled by a kind of cut into squares numbered 1-10 from a distance of c 30 ft. A variety of this game has been known since the 15th century.

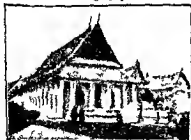
Shyok river of N W India tributary of the Indus rises in the Himalayas c 90 m S of the Karakoram Pass to which its valley is the chief route. It came into prominence in 1936 when its upper waters were blocked by an ice dam forming an extensive lake. In Aug 1929 the dam burst producing a rise of 60 ft in the Indus and causing disastrous floods.

Sialkot (1) District of the Punjab British India. Agriculture is the chief occupation. Area 1990 sq m. pop 950 000.

(2) Capital of (1) and a British military station situated 70 m N E of Lahore. The main manufactures are paper and Army equipment (tents sports apparatus etc). The town has interesting ruins including a Sikh place of worship and a fortress. Pop 70 800.

Siam (*Siam* or *Muang Thai*) kingdom in the Indo-Chinese Peninsula bounded N and W by Burma N and E by French Indo China and extending S through the Malay Peninsula to the Malay States.

Relief From the N W mountains extend in two roughly parallel chains



R yal T m p l B g k k S a m.

One crossing the centre of the country and the other forming part of the ... and extending far S into ... peninsula. Between

this and the central range is the basin of the river Me Nam extending in a N to S direction and E of the central range is the great basin of the



Street B g k k S a m

Mekong (c 3000 m) which forms most of the E boundary. The coast generally is low lying and along the W of the Malay Peninsula is fringed with island.

Climate Flora and Fauna The climate is of the monsoon type the wet season corresponding to the English summer. The heat is rarely excessive but the general humidity makes Siam unsuitable for Europeans. Flora include mangroves and similar species on the coasts rice coconuts and tropical fruits in the centre and rich forests of teak ironwood and other commercial timbers in the N. Tigers elephants rhinoceroses many varieties of deer buffaloes snakes and crocodiles are found.

Agriculture The staple product is rice which forms the principal food of the natives and is also a large export. Irrigation schemes have increased the area of arable land and much enlarged the output. Tobacco rubber and coconuts are of

and sugar-cane are fairly widely grown

Minerals and Industries Tin is the chief product. Coal, iron, tungsten, copper, rubies, sapphires, silver, zinc, and lead are also found. Industry, with the exception of mining, lumbering, and rice-milling, is undeveloped. The main imports are cotton goods, machinery, and foodstuffs. Bangkok, the capital, is the largest town, other towns are Ayudhya, Pak Nam, Nakhon Patom, and Bhuket.

Races, Religion, Education, Transport Besides Siamese and Laos, the population includes Chinese, Burmese, Shans, Cambodians, and c. 2000 Europeans and Americans. The predominant religion is Buddhism. Education is in the care of the State and is fairly well established. Primary schools are compulsory, and free. A university is at Bangkok. There are 2000 m of railways, 1500 m of roads, river transport is widely used and civil aviation is gradually being introduced.

History Siam attained its present approximate size, and became a united country, in the 14th cent. Trade with Europe was begun in the 15th cent. by Portuguese, who were supplanted by the English and Dutch. Later this trade lapsed, and did not revive to any marked extent until the 19th cent., when treaties of friendship regulating commerce were made with Holland, Great Britain, France, and Japan. The steady acquisition by France and England of the neighbouring territories freed the country from the border attacks which had gone on for centuries, and, after some territorial disputes with the French, which were satisfactorily settled by the end of the 19th cent., Siam was able to go steadily forward with various economic and social reforms, culminating in the popular government of 1932, when a limited monarchy replaced the former absolutism. There was a revolutionary outbreak in 1933, which was suppressed. Area, 200,230 sq m, pop c 11,700,000.

Siamese Twins See TWINS

Sibelius, Jean Julius Christian (b

1865), Finnish composer, studied at Berlin and Vienna, later becoming principal of the Helsinki Conservatoire. His *Finlandia* and *Valse Triste* have long been familiar to British audiences, and his larger works have more recently been performed in England. His symphonies and symphonic poems such as *Lapland*, *En Saga*, and *The Swan of Tuonela*, are recognised as works of genius. He has composed 7 symphonies, various other orchestral works, a violin concerto, chamber music, and a large number of songs.

Siberia, geographical district of the USSR in Asia, the territory extends from the Arctic Ocean to the Mongolian frontier and from the Urals to the Pacific, area, over 5,000,000 sq m. The N is barren and arctic, but farther S many flowers and fruits flourish. In the N fur-bearing animals are hunted. Lake Baikal is the largest fresh-water lake in Russia. The chief towns are Omsk, Tomsk, Krasnoyarsk, Irkutsk, Chita, and Vladivostok, the eastern terminus of the Trans-Siberian railway. Industries are scattered and very varied, they are mostly concerned with timber and the manufacture of food and clothing. The Siberian dairy industry is important. Gold is mined in the Far East. The pop (c 19,250,000) is mainly composed of Russian emigrants, the rest are mainly Mongolian nomads—Buriats in the SE, Samoyedes along the Arctic and Tatars along the S and SW border. A few of the Ostyak tribes along the Yenisei are believed to be survivors of the original inhabitants. See also FAR-EASTERN ASIA.

Sibyls, in Roman mythology, priestesses of Apollo who prophesied, when under his influence, their words being written in what were called the Sibylline verses, books, or leaves. These books were kept with great care until they were burned in the destruction of the Capitol in B.C. 83.

Sicilian Vespers, The, the massacre of the French in Sicily, on March 30, 1282. So called because it started at vespers on Easter Monday. Its immediate

cause was the act of a French soldier insulting a bride on her way to church. In 3 days the entire garrison of Charles of Anjou was annihilated thus putting an end to Angevin rule in Sicily.

Sicily an island off the S coast of Italy. It is triangular in shape with its apex at the Strait of Messina which separates it from the mainland. There are good harbours at Messina, Palermo, Trapani, Siracusa (Syracuse) and Catania. Sicily is hilly, the highest points in the NE culminating in the active volcano Mount Etna (10 700 ft.). In the W and S are low hills and coastal plains and there is a small plain in the E, where several rivers of which the Simeto is the chief enter the Gulf of Catania. The climate is warm and favours the growth of flowers, the olive and citrus fruits. Grapes and many kinds of fruit are cultivated intensively and grain, almonds and vegetables are grown on the larger holdings. Industries include wine making, fruit preserving and the production of chemicals. Area 9936 sq m pop c 4 430 000.

In the 8th cent BC the Greeks began to plant colonies of which Syracuse (founded by Corinth) was the most important. From the 6th cent BC much of Sicily was ruled by tyrants including Gelo who defeated the Carthaginians at Himera in 480 BC. For the Athenian attack on Sicily in 415-413 BC see GREEK HISTORY. In the 4th-3rd cent Carthage was dominant but at the end of the first Punic War (212 BC) she surrendered all her Sicilian possessions to Rome and Sicily became a Roman province. In the 9th cent AD the Saracens began their conquest of the island. In the 11th cent it was conquered by the Normans. For later history see NAPLES ITALY.

Sickert, Walter Richard (b 1860) English artist born at Munich, his father and grandfather were German painters. He studied in London under Whistler and later worked in Paris where he learned much from the French Impressionists. He was elected A.R.A.

in 1904 and president of the Royal Society of British Artists in 1928. Among his best known works are his portrait of George Moore *The Camden Town Murder* and *Hôtel Royal Dieppe*. The British Museum, the Tate Gallery and the Luxembourg possess specimens of his work.

Sickle a hook shaped steel instrument with handle having the cutting edge on the inner curve of the blade and used for cutting grass grain etc.

Sicyon, ancient city State in the Peloponnese, adjoining Corinth on the W. In the 7th and 6th cent BC the city was ruled by benevolent tyrants of whom Cleisthenes (namesake of the Athenian legislator) was the best known. The School of Sicyon produced such artists as the painter Apelles and the sculptor Lysippus. In the 3rd cent BC Aratus of Sicyon put new life into the Achaean League (qv). The city was deserted in the time of Pausanias.

Siddons, Mrs Sarah (1755-1831) English actress daughter of Roger Kemble and sister of John Philip Kemble (qv) married William Siddons an actor 1773. She established her reputation by her performance of Isabella in Southerne's *Fatal Marriage* at Drury Lane 1783. She excelled in tragic roles notably as Lady Macbeth, Volantia in *Comenius*, Queen Catherine in *Henry VIII*, Constance in *King John* etc. Mrs Siddons retired from the stage in 1811 but appeared occasionally till 1819. Her portrait was painted by Reynolds (as the Tragic Muse) Gainsborough, Lawrence and others.

Sidereal Time, see OBSERVATORIES.

Siderite, another name for Chalybite (qv).

Sidney Algernon (c 1622-1683) English politician. He fought in the Parliamentarian army at the battle of Marston Moor (1644). For his refusal to take part in the trial of Charles I and his opposition to Cromwell's dictatorship he was deprived of the governorship of Dover Castle and went abroad. He returned in 1659 but died at the Restoration and travelled in

Europe In 1677 he was allowed to return, but for his support of Monmouth was tried for treason in 1683, after the Rye House Plot, and beheaded His works include the *Letters to Henry Savile* and *Discourses concerning Government*

Sidney, Sir Philip (1554-1586), English poet and courtier He was a favourite of Elizabeth, and became a patron of literature, Spenser dedicating the *Shepherd's Calendar* to him (1579) He was regarded as the flower of chivalry and the pattern of Elizabethan courtiers *Arcadia* (1590), a pastoral romance, was his first publication, but the sonnet-sequence, *Astrophel and Stella* (written c 1581, published 1591), which celebrates his love for Lady Penelope Rich, is his most important work His *Apologie for Poetrie* (1581), an essay in criticism on classical lines, was a reply to Stephen Gosson, who had attacked the drama on moral grounds In 1585 he was made Governor of Flushing, and in the next year was killed in the Battle of Zutphen (q v)

Sidon, chief town in the S Lebanon district of Syria, on the Mediterranean coast, formerly the capital of Phœnicia Its harbour is gradually silting up, but it still does a flourishing trade in fruit, such as oranges The town is of great antiquity, and its prosperity made it the prey of marauders, from Biblical times onward It was sacked by Greeks, Persians, Romans, Egyptians, and Crusaders In the 17th cent it prospered under its Arab rulers Later known as Saida, it was during the World War attacked and occupied by the Allies, and after the War came under French mandate Pop c 13,500

Siebengebirge (or *Seven Hills*), group of volcanic hills, 1000-1500 ft high, on the Rhine, near Bonn One of the hills Drachenfels (1067 ft), has a ruined castle on its summit The highest is Ölberg (1522 ft) The district is a favourite resort of tourists

Siegfried, in German legend, a king of the lower Rhine, who captured the treasure of the Nibelungs (q v)

He is the central figure of Wagner's operas, *The Ring of the Nibelungs*

Siemens, Sir William (1823-1883), an inventor and engineer, born in Hanover, came to England in 1842 His invention of a regenerative furnace using gaseous fuel revolutionised the manufacture of steel and glass, and in electricity, he improved the dynamo with the Siemens armature, invented an electric furnace, and played considerable part in the laying of telegraph cables on land and under the sea He was made a F.R.S in 1869 and became President of the British Association in 1882

Sienna (or *Stienna*) (1) Italian department in Tuscany The province exports silks, wine, and wheat, and olives are grown Area, 1470 sq m pop (1931) 260,000 (2) Capital of (1) The town is noted for its many beautiful buildings, and is connected with the names of several famous artists including Sodoma, Beccafumi, Donatello, and Duccio The Accademia delle Belle Arti has some fine examples of the Siennese school of painting The university dates from 1300 Pop 47,700

Sienkiewicz, Henryk (1846-1916) Polish novelist, is best known for his novel dealing with the life of Christians under the Emperor Nero, *Quo Vadis* (1895), which has been translated in many languages Other of his works include *Without Dogma* (1893), *The Third Woman* (1898), and a trilogy of historical novels

Sierra Leone, British colony and protectorate in W Africa, bounded N by W, and NE by French Guinea, S by Liberia, and W by the Atlantic Ocean The colony is chiefly confined to a strip of land along the coast not more than a mile wide, the protectorate adjoins it to the N and E

The country is mainly a hilly plateau rising gradually to the NE until it reaches 5000 ft in parts The climate on the coast is very hot and damp, and the region was formerly known as the "White Man's Grave"

The chief exports are palm-oil

palm kernels guager and hides and skins The rubber industry once flourishing has declined through over production The capital is Freetown (91)

Settlements had been established on the coast as early as the 16th cent. by first the Portuguese and then the British mainly to carry on the slave trade The British colony dates from 1887 the protectorate from 1898 Slavery was abolished in 1948

Area colony c 4000 sq m
protectorate 26 670 sq m Pop
colony (1931) 96 400 protectorate
1 67 000

Sierra Nevada (1) Mountain range in Andalusia S Spain starting just S of Granada it stretches E to the Almeria R It culminates in the Cerro de Mulhacen (11 400 ft) highest peak in Spain () Range in USA stretching roughly N-NW from California the W edge of the Mojave Desert into Oregon part of it runs into Nevada It is a range of huge peaks and deep cañons some of which are famous The highest point is Mount Whitney (14 500 ft)

Sierst, Emmanuel Joseph (1748-1836) French statesman He became vicar general and chancellor of the diocese of Chartres On the eve of the Revolution he wrote a pamphlet *What is the Third Estate?* in defence of the people and on the strength of it was elected deputy for Paris to the States-General In the third National Assembly he voted for the death of Louis XVI in 1793 was sent on a diplomatic mission to The Hague and in 1798 attempted to enlist the aid of Prussia against the second coalition but failed in his object He was made a member of the Directory but helped Napoleon in his *coup d'état* and after it produced a moderate constitution He retired but returned to the Senate in 1800 to defend the rigorous methods employed by Napoleon to rid himself of the Jacobins

Sigmund (1367-1427) Roman Emperor son of Charles IV became margrave of Brandenburg in 1384 and

King of Hungary in 1387 In 1396 he led a crusade against the Turks and was routed at Nicopolis After many protracted conflicts he was elected German king in 1410 and played a leading part in the Council of Constance (1414) Bohemia refused to recognise him as king and the Hussites and Turks attacked him without ceasing He was however crowned emperor in 1433

Signalling, communication by means of a prearranged system Signalling has been practised by primitive peoples since the earliest times among whom a drum or tom tom conveys news over long distances Beacon fires broadcast tidings of the Armada trumpets were commonly used in battle in the 17th cent Field telegraphy is the most rapid and effective and many thousand miles of wire were laid on all fronts in the World War Wireless telegraphy is slower but enjoys the advantage that communication cannot be cut by the enemy though deliberate jamming may reduce its efficiency Flags heliographs and electric signalling lamps permit of visual communication and are useful where light cheap apparatus which does not easily get out of order is required

In the Navy signalling flags have been used since the 13th cent towards the end of the 17th the system was reorganised in its present form by Sir William Penn For merchant vessels the International Signal Code was drawn up in 1857 by the British Board of Trade In the Navy special codes are used with semaphore or Morse Most of the military methods of signalling are employed and additionally sirens whistles and foghorns

Signboards, painted boards bearing a picture or symbol indicating the nature of the house outside which they are placed have been used since the time of the ancient Egyptians and were common in Greece and Rome

In the 16th and 17th cents signboards were used in England by all kinds of shopkeepers to denote their wares even banks having them Later

the custom became for the most part limited to public-houses and inns.

Punning signboards were quite common, and also those with a device arising from a corruption of some familiar phrase, such as "Goat and Compasses" for "God Encompasses Us". The barber-surgeon's striped pole is still used by many barbers, who are no longer surgeons, the three brass balls of the pawnbroker are said to be derived from the arms of the Lombards, famous moneylenders of the Middle Ages.

Signet, a private seal used on documents and personal letters. The privy signet is the personal seal of the Sovereign used on private documents and under the sign manual, especially in the case of certain writs issued in Scotland hence the title of the Scottish law officer *Writer to the Signet*.

Sign-manual, an autograph signature, especially the royal signature giving validity to official documents. A sign-manual warrant may authorize the affixing of the Great Seal, or appoint the holder of an office. The sign-manual must always be countersigned by some Minister of the Crown, who is responsible to Parliament.

Signorelli, Luca (c. 1450-1523), Italian artist of the Tuscan school, born at Cortona. He worked in Florence and Rome, and was engaged on some of the painting in the Sistine Chapel. His finest work was done in Orvieto Cathedral, where he was employed in 1499 on the magnificent frescoes in the chapel of S. Brizio. Examples of his work are in the Uffizi at Florence, in Berlin, and in the National Gallery.

Signs, Electric. Cheap current has led to the development of a very large industry, full of ingenious devices, for constructing brilliant signs for advertising purposes and other announcements. The first type of sign developed consisted of numbers of incandescence lamps fixed on metal frames and having their leads connected to automatic switch gear driven by an

electric motor whereby any successive combination of lamps could be switched on and off. By covering a signboard with a large number of small lamps connected to contacts corresponding arranged on a switchboard, it is possible to switch on lamps to form any pattern, for instance letters of the alphabet, by pressing on the contacts a corresponding shape cut in metal. On this principle, signs exhibiting any desired lettering can be made, if letters are drawn across the switchboard consecutively, they appear to travel across the signboard. Announcements of any length can thus be made legible to the public.

Quite recently, the construction of signs from gas discharge tubes filled with the inert gases—neon, argon, etc.—has developed into a large industry, now that the technique of making such tubes in a durable form has been mastered. Colour effects are produced apart from those given by the natural colour of the gas spectrum, by using glass which fluoresces brilliantly under the radiation emitted by the gas. Another ingenious device makes use of thick plate glass, on which the lettering or other design is sand blasted. Light is sent in at the edge of the glass and is totally reflected inside it excepting where the sand blasting occurs, here it can escape, so that the sand blasted parts appear luminous. See also **TRAFFIC**.

Sigurðsson, Jón (1811-1879), Icelandic statesman and author, played a great part in the development of modern Iceland. To him is due the freeing of Icelandic trade in 1855 which, until then, had been a monopoly of Danish merchants. In 1874 his unceasing efforts obtained from Denmark the grant of Home Rule, and the re-establishment of the Althing, the ancient Parliament of Iceland. Sigurðsson contributed valuable research work to Icelandic history and literature.

Sikhs, an Indian religious community living in the Punjab, differing from the Hindus in rejecting

such practices as purdah seclusion and infanticide sati and pilgrimages. The religion was founded by Nanak (1469-1539) who intended it to be monotheistic and to combine the Hindu and Mohammedan religions. He stressed the value of justice kindness and honesty and adhered to the doctrine of transmigration. He was succeeded by nine other teachers the third of whom Ram Das founded the sacred city of Amritsar. The last and most famous of the nine was Govind Singh (1666-1708) who to some extent broke away from both Hinduism and Mohammedanism and wrote a supplementary volume to Nanak's scriptures. He called the community *Akalsa* the property of God and divided it into federated States as soon as it obtained political independence in 1947. Ranjeet Singh (1780-1839) consolidated the States into a formidable power in 1800 and a treaty was made with Britain in 1809. Following his death the Sikhs made an attack on the British in 1840 but were heavily defeated. A further outbreak took place in 1848 following which Britain annexed the Punjab and proved such good administrators that the Sikhs supported the British in the Indian Mutiny. They were largely recruited for the native army in consequence and rendered good service in the World War.

Si Kiang river of S China length 1930 m. It rises in the province of Yunnan and under various local names flows generally E. entering the S China Sea by a huge delta at the N. section (known as Canton R. or Chu Kiang) of which stands Canton. The river is one of the most important means of communication in S China.

Sikkim, small Indian State under British protection in the Himalayas bounded W. by Nepal S. by Bengal and N. and E. by Tibet. The State is entirely composed of mountain areas from 1000 to 18 000 ft above sea level. The peaks include the famous Kanchenjunga (28 146 ft) D^o (25 600 ft) and Chomomo (13 800 ft). The

largest river is the Tista. The climate varies from subtropical to Arctic and flora and fauna vary with the climate. On the higher plateaux cattle are raised lower down millet and maize are cultivated and some woollens are made. There are no towns and hardly any industries. Buddhism is the official religion. Area 78 0 sq m. pop. (1931) 109 800.

Silenus in classical mythology the friend and follower of Bacchus represented as a corpulent red faced happy old man garlanded with flowers and riding on a donkey. His name was also given to Fauns and Satyrs in general.

Silesia district in Central Europe mostly in Germany partly in Poland and Czechoslovakia formerly part of the German and Austrian Empires.

The most important industry is mining mainly coal but also iron zinc silver and some precious stones and rarer metals. The main industries are associated with the mines—smelting and heavy engineering.

Chief towns are Breslau (q.v.) capital of German Silesia (pop. 630 800) G^orlitz (pop. 91 700) Schweidnitz Hirschberg Neustadt and Glatz.

History Before its incorporation in A.D. 1000 by Poland Silesia was occupied by clans of Slavonic origin.

Eventually it fell under Austrian domination and so remained till Frederick the Great of Prussia seized the greater part of it. Prussian Silesia remained a German province till the World War. The Versailles Treaty awarded Southern (Austrian) Silesia to Czechoslovakia and Poland and provided for a plebiscite of the inhabitants whether industrial Upper Silesia should belong to Poland or Germany. The vote showed a substantial majority in favour of Germany but Polish majorities in several districts. Acrimonious disputes followed. Eventually the League of Nations made an award dividing industrial Upper Silesia between Germany and Poland subject to an arrangement to prevent dislocation of industry. The

award has given rise to many disputes over conditions of trade and industry Area, German Silesia, 14,000 sq m, Polish Silesia, 1633 sq m, Czechoslovakian Silesia, 1708 sq m Pop German Silesia, c 4,500,000, Polish Silesia, 1,125,000, Czechoslovakian Silesia, 735,000

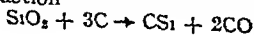
Silica, *see* SILICON

Silicon, a non-metallic element and, after oxygen, the most common of all the elements. It does not occur in the uncombined state, but its compounds form the greater part of all rocks, clays, and soils in which it occurs in the form of silicon dioxide or silica, SiO_2 , and as metallic silicates. Silica is found also in both vegetable and animal organisms. Transparent quartz or rock crystal is crystalline silica. Numerous other forms of silica, such as, for instance, sand, also occur naturally. Elementary silicon can be obtained by the reduction of the dioxide with magnesium or of the tetrachloride with sodium (*see* ELEMENTS).

Pure silicon does not find any appreciable industrial utilisation as such, but it is an important constituent of various alloys, especially steel.

Compounds of Silicon. Chemically silicon resembles carbon. Of the silicon compounds probably the most important is the dioxide, or silica, employed in enormous quantities in the manufacture of glass (*qv*), of which it is the principal constituent. Glass made entirely of silica has certain very valuable properties, such as a small coefficient of thermal expansion, enabling it to be heated to redness and then quenched in water without fracture, it is also transparent to ultraviolet light. Quartz is employed in the manufacture of optical apparatus and can exist in dextro-rotatory and laevo-rotatory (*qqv*) forms.

After silica the most important compound is carbon silicide (or silicon carbide), CSi , which is manufactured in the electric furnace by heating silica with an excess of carbon, according to the reaction



Silicon carbide is usually known by its trade name of *carborundum*, and it is widely employed as an abrasive. It is also used in the manufacture of electrical resistances.

Other silicon compounds of practical importance are calcium silicide, CaSi , employed in the preparation of explosives, silicon tetrachloride SiCl_4 , used in the production of smoke screens (*qv*, *see also* CHEMICAL WARFARE), and various fluo-silicates used in the manufacture of certain types of paint, and of concrete floors. The numerous organic compounds of silicon are only of theoretical interest.

Silk, Artificial, *see* ARTIFICIAL SILK

Silkworm, the caterpillar of various species of moths, including the atlas moth, which spins a cocoon of silk of commercial value. These moths are mostly found in the East, where their cultivation forms an important industry. The larvae feed on mulberry leaves.

Sill (geol.), a sheet of igneous rock intruded into overlying beds and lying nearly horizontal over a large area. Sills are often composed of dolerite (*qv*). This is the case in the famous Whin Sill of the N of England, extending some 80 m from Westmorland to the Northumberland coast. An even longer sill occurs in the Hudson district of Canada. A great number of small sills occur in the volcanic districts of N Ireland and W Scotland, and sills are frequently associated with volcanoes, as in the Sandwich Islands.

Silo, a pit, trench, steel tower, or building from which air is excluded and used for storing and preserving fodder in a green compressed state (*see* ENSILAGE).

Silurian System, term for the Palaeozoic rocks laid down during the period between the Ordovician and Devonian (*qqv*). The limits of the system are not easy to define, and for a long time the geological survey considered the Ordovician system as a lower division of the Silurian, until Lapworth (*qv*) drew up the present scheme of classification of the beds. Like the Ordovician